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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--------------------------------------------------------------------------------|-------------|----------------------|-----------------------------------|------------------|
| 09/890,711 | 08/02/2001 | Chiaki Kasada | KASADA-4 | 6303 |
| 7590 Browdy and Neimark 624 Ninth Street NW Washington, DC 20001-5303 | | | EXAMINER ANGEBRANNDT, MARTIN J | |
| | | | ART UNIT 1756 | PAPER NUMBER |
| | | | | |
| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE | | |
| 3 MONTHS | 12/28/2006 | PAPER | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

09/890,711

Applicant(s)

KASADA ET AL.

Examiner

Martin J. Angebrannt

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/08/06 & 12/1/06.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 10-12 and 18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 10-12 and 18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The response of the applicant has been received and made of record. Responses to the arguments of the applicant are presented after the first rejection to which they are directed.

Claims 6-8,10-12,15 and 18 are active. Rejections of the previous office action not repeated below are withdrawn based upon the amendments to the claims and corresponding arguments.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 10-12 and 18 are rejected under 35 U.S.C. 102(b) as being fully anticipated by JP 60-083892

See examples 2-5 in table 1 on page 22. These use dyes D-17 and D-21 on page 7. The singlet oxygen quenchers both absorb in the visible and act to stabilize the other dyes.

The dye is cationic and needs an anion as the counterion and the quencher is an anion with a cationic counterion, these will exchange ions in solution and at least some of the compound of the dyes D-17 or D21 with the quencher as the counterion will be present in the dyes solution

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and the resulting coated optical recording medium film. The use of a HeCd laser, which inherently emits at 325 and 441.8 nm is disclosed. (page 20/lower right)

The examiner had an oral spot translation made, if the applicant has an English translation made, the examiner would appreciate a copy with the subsequent response.

The applicant could obviate this rejection by adding a limitation that the track pitch is below 0.74 microns in the original specification at page 37/line 13. As discussed in the advisory action, the information content limitation is met by the media of the prior art, which have no format or grooving to impose a limitation on the information content beyond the ability to absorb the laser light and the ability to focus the laser down to a specific spot size. The absorption of the laser is inherent to the dye and the diffraction limited spot size is a function of the wavelength of the laser used and the numerical aperture (proportional to wavelength/NA). The disclosure of the HeCd laser which emits at 441.8 nm addresses the functionality of the medium at these wavelengths as well as the wavelength dependence of the spot size. The root of the difficulty the applicant is having is that dyes bounded by the recitation of formula 1 have been used on optical recording media, but there have been advances in tracking, the use of near field imaging and available semiconductor laser wavelengths since that time. The claims do not take advantage of these advances in combination with the recited dyes. The applicant also fails to appreciate that dyes may absorb in multiple regions of the spectrum due to different chemical moieties or structures within the dye compound. Were the media of the prior art to include tracking groove, the applicant's position would be correct, but they do not. And are therefore not limited in format to the CD format argued by the applicant.

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5. Claim 10-12 and 18 are rejected under 35 U.S.C. 102(b) as being fully anticipated by JP 60-232995

JP 60-232995 teaches the use of dyes of formula II, where Y₂ is a heterocyclic moiety, L₁ and L₂ are CH, l₂ is 1, R₂₁ is alkyl and R₂₂ is a monovalent group (page 7). The use of the singlet oxygen quenchers shown on pages 19-21 is disclosed. Examples 1-10 show mixtures of dyes in the recording layer (table 1, page 32). Example 1 coats a 30 nm acrylic disk with a colloidal silica subbing layer and then the dye layer formed to a thickness of 0.06 microns (60 nm). (page 32/upper left column). Example 2 on page 32 is formed as in example 1, but with different dyes, specifically dye D₁₁ and dye D⁻ I 2 (see table on page 32). Dye D⁻ I 2 is shown on page 6./upper left). Dye D₁₁ is dye D⁺ I 17 with quencher Q⁻ 1-8. Dye D⁺ I 17 is the dimethine dye shown in the shown at the bottom of page 6. Quencher Q⁻ 1-8 is a bis dithiolate shown on page 19/lower right. Dyes D⁺ II 1 and D⁺ II 4 are dimethine dyes described on page 7-9, particularly in the table on page 9 and with their counter ions on page 24/upper left. Y₂ can be other rings. The use of a HeCd laser, which inherently emits at 325 and 441.8 nm is disclosed. (page 31/lower left)

Examples 1-3 meet the claims where the phi 1 is indolene and phi 2 is a heterocycle.

The examiner had an oral spot translation made, if the applicant has an English translation made, the examiner would appreciate a copy with the subsequent response.

6. Claims 10-12 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 60-232995.

To address the embodiments where phi 2 is an aromatic ring, the examiner holds that it would have been obvious to one skilled in the art to modify example 1 by replacing dye D⁻ I 2

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with dyes D⁻ II-1 or D⁻ II-4 with a reasonable expectation of forming a useful optical recording medium with similar performance based upon the equivalence of dimethine dyes as the secondary dyes. The resulting combination would include a quencher and some ion exchange would occur leaving the quencher Q I-8 as the counterion for the dye D⁺ II 1 or D⁺ II 4.

To address the embodiments where phi 1 is benzoxazole or benzothiazole and phi 2 is a heterocycle, it would have been obvious to one skilled in the art to modify example 2 by using dyes D⁺ I-3 through D⁺ I-8, and D I-18 through D⁺ I 20, in place of D⁺ I 17 with a reasonable expectation of forming a useful optical recording medium based upon the disclosure of equivalence.

The examiner had an oral spot translation made, if the applicant has an English translation made, the examiner would appreciate a copy with the subsequent response.

7. Claims 10-12 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 60-232995, in view of Okusa et al. '046.

Okusa et al. '046 teaches dyes II-25,II-28, II-32, II-53,II-56,II-58,II-66,III-2, III-14,II-15,III-21,III-31,III-32,III-44,III-45. Example 115 in table 1 uses III-44. These are sensitizing agents (51/24-33). Note that these are shown to be superior to the comparative compounds CR-1 through CR-5 which are p-dialkyl substituted. See various moieties (40/39-55). The groups for R₂₁ to R₂₅ of formula II in column 2 may be hydrogen, alkyl, halogen, alkoxy, aryl, hydroxyl or heterocycles. (2/63-67).

To address the other embodiments where phi 2 is an aromatic moiety, the examiner holds it would have been obvious to modify the medium rendered obvious above, by replacing the indolene moiety in dye D⁻ II-1 or D⁻ II-4 with thiazole, benzothiazole,, oxazole, benzooxazole,

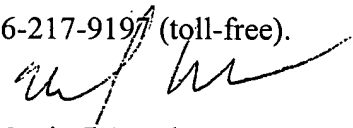
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pyridine, quinoline, imidazole or benzimidazole based upon the equivalence in formula II on page 7 of JP 60-232995 and the that of formula IV in Okusa et al. '046 with a reasonable expectation of forming a useful optical recording medium.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J. Angebranndt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Martin J. Angebranndt
Primary Examiner
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02/20/2006